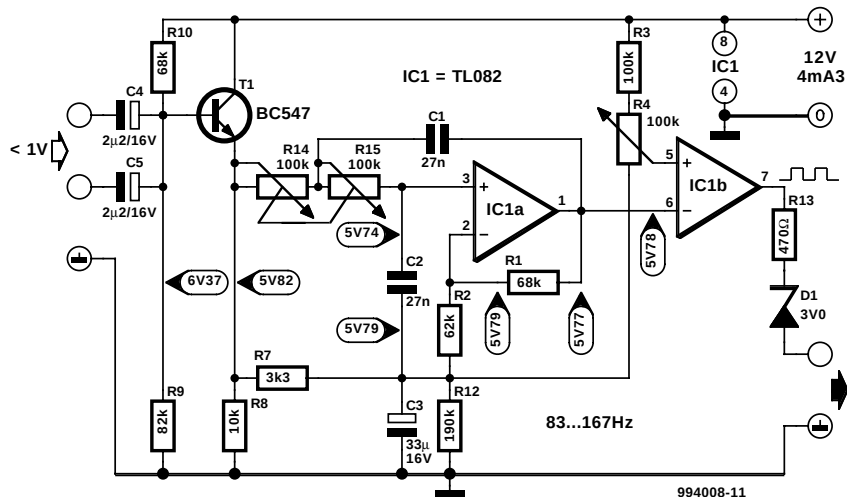


# stroboscope filter

# 021

*Design: J. Ferber*

To drive a stroboscope from an audio signal, the signal must first be reduced to its low-frequency component. This can be done with the circuit presented here. Coupling capacitors C4 and C5, for the left and right channels, prevent any DC voltages in the audio signals from reaching the transistor buffer stage (T1). The buffered audio signal is applied to an active second-order low pass filter, whose upper frequency limit can be adjusted over the range of approximately 80 to 170 Hz using the stereo potentiometer



R14/R15. Good tracking between the two halves of this potentiometer is a basic requirement for proper operation of the filter. Here we are not so much interested in minimum distortion of the low-frequency component of the input signal, since all we need is a signal that is suitable for triggering the stroboscope circuit. This is achieved by applying the signal to a comparator with an adjustable reference potential. The trigger level of the circuit can be varied using R4. When the signal amplitude is high enough, a pulse signal appears at the output of IC2a.

An optocoupler is essential to provide galvanic isolation between

the filter and the stroboscope. As a rule, this is present at the input of the stroboscope, so all we have to do is to reduce the output voltage by 3 V (using D1) and provide a current-limiting resistor (R13) at the filter output.

Perfectly inexpensive opamps (such as the TL082) can be used for the filter. With a simple +12-V supply and the indicated component values, the current consumption of the filter circuit is around 4.3 mA.

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